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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,731	02/26/2002	James E. Roddy	83529NAB	8323

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EXAMINER

PHAM, HAI CHI

ART UNIT	PAPER NUMBER
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2861

DATE MAILED: 01/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/084,731

Applicant(s)

RODDY ET AL.

Examiner

Hai C Pham

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-- **Th MAILING DATE** of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20, 24-106, 110 and 111 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-20, 24-84 and 111 is/are allowed.
- 6) ☒ Claim(s) 85-106 and 110 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

FINAL REJECTION

Drawings

1. The drawings were received on 11/10/03. These drawings are approved.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 85-86, 102-105 are rejected under 35 U.S.C. 102(b) as being anticipated by Paoli (U.S. 6,133,933).

Paoli discloses a color xerographic printing system for printing to a color photosensitive medium (photoconductive belt 10), the printing system comprising a light source for generating a first color beam, a second color beam, a third color beam, and a fourth color beam (the printbar including four arrays of light emitting diodes LEDs emitting light of different colors/wavelengths), wherein each of said first, second, third, and fourth color beams are generated sequentially (col. 4, lines 4-8), a modulator (not shown) for modulating said color beams (col. 11, lines 43-46), and an optical system (microlenses or lenses) for imaging said modulated beams onto said photosensitive medium (col. 7, lines 19-21).

The method claim 85 is deemed to be clearly anticipated by functions of the above structures.

With regard to claims 102-105, Paoli further teaches:

- said light sources being selected from a group comprised of infra-red, red, green, yellow-green, blue-green, blue, and ultra-violet lasers (the four color lights being blue, green, red, and infra-red),
- said light sources being selected from a group comprised of infra-red LED array, red LED array, green LED array, blue-green LED array, yellow-green LED array, a blue LED array, and an ultra-violet LED array (the four color light sources being blue, green, red, and infra-red LED arrays),
- each of said light sources are comprised of infra-red LED, red LED, green LED, blue-green LED, yellow-green LED, blue LED, and ultra-violet LED (the four color light sources being blue, green, red, and infra-red LEDs),
- said light sources are selected from a group comprised of laser, LED array, filtered xenon, and filtered tungsten (the light sources being LED arrays).

4. Alternatively, claims 85-86, 97-98, 102-105 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamada et al. (U.S. 6,414,705 B1).

Yamada et al. discloses an optical printing apparatus comprising a light source for generating a first color beam, a second color beam, a third color beam, and a fourth color beam (light sources 5 emitting a plurality of lights of different colors/wavelengths) (col. 6, lines 13-27), wherein each of said first, second, third, and fourth color beams are

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generated sequentially (col. 8, lines 27-42), a modulator (LCD shutter) for modulating said color beams (col. 11, lines 43-46), and an optical system (Selfoc lens array 9) for imaging said modulated beams onto said photosensitive medium (photosensitive recording medium).

The method claim 85 is deemed to be clearly anticipated by functions of the above structures.

With regard to claims 97-98, 102-105, Yamada et al. further teaches:

- said modulator being a transmissive LCD (col. 1, lines 6-17),
- said modulator being a digital micromirror device (col. 1, lines 6-17),
- said light sources being selected from a group comprised of infra-red, red, green, yellow-green, blue-green, blue, and ultra-violet lasers (col. 6, lines 14-28),
- said light sources being selected from a group comprised of infra-red LED array, red LED array, green LED array, blue-green LED array, yellow-green LED array, a blue LED array, and an ultra-violet LED array (col. 6, lines 14-28),
- each of said light sources are comprised of infra-red LED, red LED, green LED, blue-green LED, yellow-green LED, blue LED, and ultra-violet LED (col. 6, lines 14-28),
- said light sources are selected from a group comprised of laser, LED array, filtered xenon, and filtered tungsten (col. 6, lines 14-28).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 87-95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paoli in view of Hanson, Jr. (U.S. 2,763,549).

Paoli discloses all the basic limitations of the claimed invention except for the motion picture film.

Hanson, Jr. discloses a photographic film having a number of color-sensitive layers used in forming a color image including motion picture negative/print/reversal film.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the motion picture film as taught by Hanson, Jr. in the device of Paoli. The motivation for doing so would have been to produce natural color pictures.

7. Claims 97-98 and 110 is rejected under 35 U.S.C. 103(a) as being unpatentable over Paoli in view of Yamada et al.

Paoli discloses all the basic limitations of the claimed invention except for the transmissive LCD, digital micromirror, and LCD shutter being used as modulator.

Yamada et al. discloses a color printing system using either a transmissive LCD or shutter, or a reflective elements such as micromirror elements for sequentially modulating each of the color light beams (col. 1, lines 6-17).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the types of modulators as taught by Yamada et al. in the device of Paoli since it is old and well known in the printing art to use these conventional modulators to modulate each of the light beams.

8. Claims 96, 99-101, 106 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paoli in view of Okazaki (Pub. No. U.S. 2001/0022566 A1).

Paoli discloses all the basic limitations of the claimed invention except for the different types of modulators.

However, it is well known in art that a variety of modulators can be alternatively selected to perform the common function of modulating the light beams, such as acousto-optic, reflective or transmissive LCD, DMD, gated light valve, electro-optic modulators, as evidenced by Okazaki, which discloses a color laser display for forming image by combining a plurality of modulate laser beams, the modulators (2) can be selected from the group mentioned above.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide a desired modulator selected from the group of modulators as taught by Okazaki to the device of Paoli. The motivation for doing so

would have been to provide a wide range of modulating devices available for selection to match a particular application.

Allowable Subject Matter

9. Claims 1-20, 24-84, and 111 are allowed.
10. The following is an examiner's statement of reasons for allowance: the primary reason for the indication of the allowability of the claimed invention, with respect to claims 1, 24, 44, is the inclusion of the limitation wherein the polarization of the fourth modulated beam is orthogonal to a polarization of the third modulated beam, in the combination as currently claimed, which is not found taught or fairly suggested by the prior arts made of record, considered alone or in combination.

The primary reason for the indication of the allowability of the claimed invention, with respect to claim 64, is the inclusion of the limitation "wherein a number of light sources for each color is inversely proportional to a film sensitivity", in the combination as currently claimed, which is not found taught or fairly suggested by the prior arts made of record, considered alone or in combination.

Claims 2-20, 25-43, 45-63, 65-84, and 111 are allowed because they are directly/indirectly dependent from claims 1, 24, 44, and 64 above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

11. Applicant's arguments with respect to claims 85-106 and 110 have been considered but are moot in view of the new grounds of rejection presented in this Office action.

Conclusion

12. Applicant's amendment, which changed the scope of each of the base claims, necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C Pham whose telephone number is (703) 308-1281. The examiner can normally be reached on T-F (8:30-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (703) 308-4896. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722, (703) 308-7724, (703) 308-7382, (703) 305-3431, (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



HAI PHAM
PRIMARY EXAMINER

January 15, 2004